# Exhibit 300 (BY2010)

| PART ONE | |
|---|---|
| **OVERVIEW** | |
| **1. Date of Submission:** | 2008-09-08 |
| **2. Agency:** | 026 |
| **3. Bureau:** | 00 |
| **4. Name of this Capital Asset:** | KSC Shuttle Ground Operations |
| **5. Unique Project Identifier:** | 026-00-01-05-01-1427-00 |

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|---|
| *6. What kind of investment will this be in FY2010?* |
| Operations and Maintenance |
| *7. What was the first budget year this investment was submitted to OMB?* |
| FY2001 or earlier |
| *8. Provide a brief summary and justification for this investment, including a brief description of how this closes in part or in whole an identified agency performance gap.* |
| Ground Operations (GO) investment provides labor and hardware to maintain information technology in facilities that directly support launch preparation of the Space Shuttle. GO supports the Shuttle Program by providing vital instrumentation data from all ground support equipment during servicing, testing, and launch preparations. This investment covers platforms, and associated maintenance of hardware and software. It covers operations and maintenance of systems that include a lightening detection system, a Ground Measurement System that provides support for permanent environmental measurements on all pad and MLP structures for post launch processing analysis, an Integrated Network Command System that provides connectivity between the Ground Support Equipment end items and the Launch Processing System, a Laser Tile Step and Gap system that uses optical lasers to measure the orbiter's thermal protective tile steps and gaps, a Propulsion System Advisory tool that is used to monitor orbiter propulsion systems during prelaunch and launch activities, a Shuttle Modal Inspection System that is used for nondestructive structural testing on the space shuttle flight control surfaces and the Forward Reaction Control System and the Kennedy Control Center System that is used to checkout, monitor, and control utilities at KSC such as the 60Hz Power, Oxygen Deficiency Monitoring System, Firex, Sound Suppression, and HVAC. GO also has an integrated computer based system for management of SSP GO products and processes. Application Services include software development for Maximo and Documentum and Sustaining Engineering for GO Legacy Systems. Application Services include software development for Maximo and Documentum and Sustaining Engineering for GO Legacy Systems. The Space Shuttle functions supported by this IT investment have existed since the mid 1970s. The business management processes and the supporting financial management processes have changed to accommodate evolving program needs and reporting requirements. While NASA can report life-cycle costs for this program and its major projects, it is extremely difficult to trace the entire life-cycle costs history associated with this IT investment. The life cycle costs reported cover FY2007 through the planned termination of the program for which the IT investment supports. The loss of this investment would require a revert to manual systems which would in turn increase headcount and impact processing schedule. |
| *9. Did the Agency's Executive/Investment Committee approve this request?* |
| yes |
| *9.a. If "yes," what was the date of this approval?* |
| 2008-06-19 |
| *10. Did the Program/Project Manager review this Exhibit?* |
| yes |
| *11. Program/Project Manager Name:* |
| Edward Mango |
| *Program/Project Manager Phone:* |
| 321.867.4343 |
| *Program/Project Manager Email:* |
| edward.mango-1@ksc.nasa.gov |
| *11.a. What is the current FAC-P/PM certification level of the project/program manager?* |

| | |
|---|---|
| Senior/Expert/DAWIA-Level 3 | |
| *11.b. When was the Program/Project Manager Assigned?* | |
| 2007-08-20 | |
| *11.c. What date did the Program/Project Manager receive the FACP/PM certification? If the certification has not been issued, what is the anticipated date for certification?* | |
| 2008-08-08 | |
| *12. Has the agency developed and/or promoted cost effective, energy-efficient and environmentally sustainable techniques or practices for this project.* | |
| yes | |
| *12.a. Will this investment include electronic assets (including computers)?* | |
| yes | |
| *12.b. Is this investment for new construction or major retrofit of a Federal building or facility? (answer applicable to non-IT assets only)* | |
| no | |
| *13. Does this investment directly support one of the PMA initiatives?* | |
| yes | |
| *If yes, select the initiatives that apply:* | |

| |
|---|
| Competitive Sourcing |
| Expanded E-Government |
| Financial Performance |

| |
|---|
| *13.a. Briefly and specifically describe for each selected how this asset directly supports the identified initiative(s)? (e.g. If E-Gov is selected, is it an approved shared service provider or the managing partner?)* |
| Ground Operations systems have been developed and maintained over many years. Modifications and upgrades have been performed based upon new technology and evolving knowledge of the requirements of launching a human-rated vehicle into space. Many modifications are unique to Space Vehicle Processing and not readily available from general industry. When modifications are required the Agency adheres to Federal regulations of competitive sourcing, E-Government, and financial performance. |
| *14. Does this investment support a program assessed using the Program Assessment Rating Tool (PART)?* |
| yes |
| *14.a. If yes, does this investment address a weakness found during the PART review?* |
| yes |
| *14.b. If yes, what is the name of the PARTed program?* |
| 10000346 - Space Shuttle |
| *14.c. If yes, what rating did the PART receive?* |
| Adequate |
| *15. Is this investment for information technology?* |
| yes |
| *16. What is the level of the IT Project (per CIO Council's PM Guidance)?* |
| Level 3 |
| *17. What project management qualifications does the Project Manager have? (per CIO Council's PM Guidance)* |
| (1) Project manager has been validated as qualified for this investment |
| *18. Is this investment identified as high risk on the Q4 - FY 2008 agency high risk report (per OMB memorandum M-05-23)?* |
| no |
| *19. Is this a financial management system?* |
| no |
| *20. What is the percentage breakout for the total FY2010 funding request for the following? (This should total 100%)* |

| | |
|---|---|
| **Hardware** | 18 |

| Software | 19 |
|---|---|
| Services | 63 |
| Other | 0 |

*21. If this project produces information dissemination products for the public, are these products published to the Internet in conformance with OMB Memorandum 05-04 and included in your agency inventory, schedules and priorities?*

n/a

*22. Contact information of individual responsible for privacy related questions.*

*Name*

Mark Mason

*Phone Number*

321-867-3014

*Title*

KSC Information Officer

*Email*

mark.mason@nasa.gov

*23. Are the records produced by this investment appropriately scheduled with the National Archives and Records Administration's approval?*

yes

*24. Does this investment directly support one of the GAO High Risk Areas?*

no

## SUMMARY OF SPEND

*1. Provide the total estimated life-cycle cost for this investment by completing the following table. All amounts represent budget authority in millions, and are rounded to three decimal places. Federal personnel costs should be included only in the row designated Government FTE Cost, and should be excluded from the amounts shown for Planning, Full Acquisition, and Operation/Maintenance. The total estimated annual cost of the investment is the sum of costs for Planning, Full Acquisition, and Operation/Maintenance. For Federal buildings and facilities, life-cycle costs should include long term energy, environmental, decommissioning, and/or restoration costs. The costs associated with the entire life-cycle of the investment should be included in this report.*

*All amounts represent Budget Authority*

*(Estimates for BY+1 and beyond are for planning purposes only and do not represent budget decisions)*

|  | PY-1 & Earlier | PY | CY | BY |
|---|---|---|---|---|
|  | -2007 | 2008 | 2009 | 2010 |
| **Planning Budgetary Resources** | 0 | 0 | 0 | 0 |
| **Acquisition Budgetary Resources** | 0 | 0 | 0 | 0 |
| **Maintenance Budgetary Resources** | 211.414 | 53.0477 | 50.9647 | 40.6786 |
| **Government FTE Cost** | 0.111 | 0.0119 | 0.0125 | 0.0129 |
| **# of FTEs** | 0 | 0 | 0 | 0 |

*Note: For the cross-agency investments, this table should include all funding (both managing partner and partner agencies).*

*Government FTE Costs should not be included as part of the TOTAL represented.*

*2. Will this project require the agency to hire additional FTE's?*

no

*3. If the summary of spending has changed from the FY2009 President's budget request, briefly explain those changes.*

This investment has experienced reductions beginning in FY08 due to requirements descoping associated with retirement in 2010.

*In order to successfully address this area of the exhibit 300, performance goals must be provided for the agency and be linked to the annual performance plan. The investment must discuss the agency's mission and strategic goals, and performance measures (indicators) must be provided. These goals need to map to the gap in the agency's strategic goals and objectives this investment is designed to fill. They are the internal and external performance benefits this investment is expected to deliver to the agency (e.g., improve efficiency by 60 percent, increase citizen participation by 300 percent a year to achieve an overall citizen participation rate of 75 percent by FY 2xxx, etc.). The goals must be clearly measurable investment outcomes, and if applicable, investment outputs. They do not include the completion date of the module, milestones, or investment, or general goals, such as, significant, better, improved that do not have a quantitative measure.*

*Agencies must use the following table to report performance goals and measures for the major investment and use the Federal Enterprise Architecture (FEA) Performance Reference Model (PRM). Map all Measurement Indicators to the corresponding Measurement Area and Measurement Grouping identified in the PRM. There should be at least one Measurement Indicator for each of the four different Measurement Areas (for each fiscal year). The PRM is available at www.egov.gov. The table can be extended to include performance measures for years beyond the next President's Budget.*

| | Fiscal Year | Strategic Goal Supported | Measurement Area | Measurement Grouping | Measurement Indicator | Baseline | Planned Improvement to the Baseline | Actual Results |
|---|---|---|---|---|---|---|---|---|
| 1 | 2007 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Customer Results | Customer Satisfaction | End User Satisfaction through the measurement of number of CRs implemented to user's satisfaction. | 100% | 100% | 100% |
| 2 | 2007 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Customer Results | Delivery Time | Annual percentage On-Time Delivery of LPS IT products supports Program's overall reliability and ensures affordability of the systems. | On-time Delivery of LPS IT Products - Standards of Excellence (SOE) = 95% Expectation = 80% Maximum Error Rate (MER) = >80% | Maintain SOE of 95% on-time delivery each year from 2005 to 2010 | 100% |
| 3 | 2007 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Technology | Service Availability | Monthly percentage of unplanned/unscheduled outage supports NASA goal of high system reliability and helps ensures space access. | Availability of systems: Standards of Excellence (SOE) = 99% Maximum Error Rate (MER) = >97% | Maintain 99% or better availability each year from 2005 to 2010 | 100% |
| 4 | 2007 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Processes and Activities | Complaints | Monthly average of 4 or less DRs across applications supports Program's overall reliability and ensures affordability of the systems. | Monthly average of 4 or less DRs across released LPS applications Standards of Excellence (SOE) = 4 | Maintain SOE of 4 or less discrepancies (DRs) against LPS released applications each year from 2005 to 2010 | 3 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | or less Discrepancy Reports (DRs) Expectation = 5 to 7 DRs Maximum Error Rate (MER) = 8 DRs | | |
| 5 | 2007 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Mission and Business Results | Space Operations | Achieve 100% on-orbit mission success for all Shuttle missions. Mission success criteria are those provided to the prime contractor for contract performance fee determination. | 100% | 100% | 100% |
| 6 | 2008 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Customer Results | Customer Satisfaction | End User Satisfaction through the measurement of number of CRs implemented to user's satisfaction. | 100% | 100% | 100% |
| 7 | 2008 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Customer Results | Delivery Time | Annual percentage On-Time Delivery of LPS IT products supports Program's overall reliability and ensures affordability of the systems. | On-time Delivery of LPS IT Products - Standards of Excellence (SOE) = 95% Expectation = 80% Maximum Error Rate (MER) = >80% | Maintain SOE of 95% on-time delivery each year from 2005 to 2010 | 100% |
| 8 | 2008 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Technology | Service Availability | Monthly percentage of unplanned /unscheduled outage supports NASA goal of high system reliability and helps ensure space access. | Availability of systems: Standards of Excellence (SOE) = 99% Maximum Error Rate (MER) = >97% | Maintain 99% or better availability each year from 2005 to 2010 | 100% |
| 9 | 2008 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Processes and Activities | Complaints | Monthly average of 4 or less DRs across LPS applications supports Program's overall reliability and ensures system affordability. | Monthly average of 4 or less DRs across released LPS applications Standards of | Maintain SOE of 4 or less discrepancies (DRs) against LPS released applications each year from 2005 to 2010 | 3 |

| # | Year | Goal | Category | Measure | Description | Standards | Maintain | Result |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Excellence (SOE) = 4 or less Discrepancy Reports (DRs) Expectation = 5 to 7 DRs Maximum Error Rate (MER) = 8 DRs | | |
| 10 | 2008 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Mission and Business Results | Space Operations | Achieve 100% on-orbit mission success for all Shuttle missions. Mission success criteria are those provided to the prime contractor for contract performance fee determination. | 100% | 100% | 100% |
| 11 | 2009 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Customer Results | Customer Satisfaction | End User Satisfaction through the measurement of number of CRs implemented to user's satisfaction. | 100% | 100% | TBD |
| 12 | 2009 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Customer Results | Delivery Time | Annual percentage On-Time Delivery of LPS IT products supports Program's overall reliability and ensures affordability of the systems. | On-time Delivery of LPS IT Products - Standards of Excellence (SOE) = 95% Expectation = 80% Maximum Error Rate (MER) = >80% | Maintain SOE of 95% on-time delivery each year from 2005 to 2010 | TBD |
| 13 | 2009 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Technology | Service Availability | Monthly percentage of unplanned /unscheduled outage supports NASA goal of high system reliability and helps ensure space access. | Availability of systems: Standards of Excellence (SOE) = 99% Maximum Error Rate (MER) = >97% | Maintain 99% or better availability each year from 2005 to 2010 | TBD |
| 14 | 2009 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later | Processes and Activities | Complaints | Monthly average of 4 or less DRs across applications supports Program's overall reliability and ensures affordability of the systems. | Monthly average of 4 or less DRs across released LPS applications | Maintain SOE of 4 or less discrepancies (DRs) against LPS released applications each year from | TBD |

| # | Year | Goal | Measurement Area | Measurement Category | Description | | | |
|---|------|------|------------------|----------------------|-------------|---|---|---|
| | | than 2010. | | | | Standards of Excellence (SOE) = 4 or less Discrepancy Reports (DRs) Expectation = 5 to 7 DRs Maximum Error Rate (MER) = 8 DRs | 2005 to 2010 | |
| 15 | 2009 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Mission and Business Results | Space Operations | Achieve 100% on-orbit mission success for all Shuttle missions. Mission success criteria are those provided to the prime contractor for contract performance fee determination. | 100% | 100% | TBD |
| 16 | 2010 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Customer Results | Customer Satisfaction | End User Satisfaction through the measurement of number of CRs implemented to user's satisfaction. | 100% | 100% | TBD |
| 17 | 2010 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Customer Results | Delivery Time | Annual percentage On-Time Delivery of LPS IT products supports Program's overall reliability and ensures affordability of the systems. | On-time Delivery of LPS IT Products - Standards of Excellence (SOE) = 95% Expectation = 80% Maximum Error Rate (MER) = >80% | Maintain SOE of 95% on-time delivery each year from 2005 to 2010 | TBD |
| 18 | 2010 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Technology | Service Availability | Monthly percentage of unplanned /unscheduled outage supports NASA goal of high system reliability and helps ensure space access. | Availability of systems: Standards of Excellence (SOE) = 99% Maximum Error Rate (MER) = >97% | Maintain 99% or better availability each year from 2005 to 2010 | TBD |
| 19 | 2010 | Goal 1: Fly the Shuttle as safely as possible until its | Processes and Activities | Complaints | Monthly average of 4 or less DRs across applications supports Program's overall reliability and ensures | Monthly average of 4 or less DRs across released | Maintain SOE of 4 or less discrepancies (DRs) against LPS released | TBD |

| | | | | affordability of the systems. | LPS applications Standards of Excellence (SOE) = 4 or less Discrepancy Reports (DRs) Expectation = 5 to 7 DRs Maximum Error Rate (MER) = 8 DRs | applications each year from 2005 to 2010 | |
|---|---|---|---|---|---|---|---|
| 20 | 2010 | Goal 1: Fly the Shuttle as safely as possible until its retirement, not later than 2010. | Mission and Business Results | Space Operations | Achieve 100% on-orbit mission success for all Shuttle missions. Mission success criteria are those provided to the prime contractor for contract performance fee determination. | 100% | 100% | TBD |

| EA |
|---|
| *In order to successfully address this area of the business case and capital asset plan you must ensure the investment is included in the agency's EA and Capital Planning and Investment Control (CPIC) process, and is mapped to and supports the FEA. You must also ensure the business case demonstrates the relationship between the investment and the business, performance, data, services, application, and technology layers of the agency's EA.* |
| *1. Is this investment included in your agency's target enterprise architecture?* |
| yes |
| *2. Is this investment included in the agency's EA Transition Strategy?* |
| yes |
| *2.a. If yes, provide the investment name as identified in the Transition Strategy provided in the agency's most recent annual EA Assessment.* |
| KSC Ground Operations |
| *3. Is this investment identified in a completed (contains a target architecture) and approved segment architecture?* |
| yes |
| *3.a. If yes, provide the six digit code corresponding to the agency segment architecture. The segment architecture codes are maintained by the agency Chief Architect.* |
| 463-000 |
| *4. Identify the service components funded by this major IT investment (e.g., knowledge management, content management, customer relationship management, etc.). Provide this information in the format of the following table. For detailed guidance regarding components, please refer to http://www.whitehouse.gov/omb/egov/.* |
| *Component: Use existing SRM Components or identify as NEW. A NEW component is one not already identified as a service component in the FEA SRM.* |
| *Reused Name and UPI: A reused component is one being funded by another investment, but being used by this investment. Rather than answer yes or no, identify the reused service component funded by the other investment and identify the other investment using the Unique Project Identifier (UPI) code from the OMB Ex 300 or Ex 53 submission.* |
| *Internal or External Reuse?: Internal reuse is within an agency. For example, one agency within a department is reusing a service component provided by another agency within the same department. External reuse is one agency within a department reusing a service component provided by another agency in another department. A good example of this is an E-Gov initiative service being reused by multiple organizations across the federal government.* |
| *Funding Percentage: Please provide the percentage of the BY requested funding amount used for each service component listed in the table. If external, provide the funding level transferred to another agency to pay for the service.* |

| | Agency Component Name | Agency Component Description | Service Type | Component | Reused Component Name | Reused UPI | Internal or External Reuse? | Funding % |
|---|---|---|---|---|---|---|---|---|
| 1 | Space and Ground Network IT Support | Ground Ops supports Process Tracking by maintaining the infrastructure including servers, storage and network services | Tracking and Workflow | Process Tracking | | | No Reuse | 2 |
| 2 | Space and Ground Network IT Support | Ground Ops supports Case / Issue Management by maintaining the infrastructure including servers, storage and network services | Tracking and Workflow | Case Management | | | No Reuse | 2 |
| 3 | Space and Ground Network IT Support | Ground Ops supports Process Track Conflict Resolution by maintaining the infrastructure including servers, storage and network services | Tracking and Workflow | Conflict Resolution | | | No Reuse | 1 |
| 4 | Space and Ground Network IT Support | Ground Ops supports Inbound Correspondence Management by maintaining the infrastructure including servers, storage and network services | Routing and Scheduling | Inbound Correspondence Management | | | No Reuse | 2 |
| 5 | Space and Ground Network IT Support | Ground Ops supports Outbound Correspondence Management by maintaining the infrastructure including servers, storage and network services | Routing and Scheduling | Outbound Correspondence Management | | | No Reuse | 2 |
| 6 | Space and Ground Network IT Support | Ground Ops supports Change Management by maintaining the infrastructure including servers, storage and network services | Management of Processes | Change Management | | | No Reuse | 1 |
| 7 | Space and Ground Network IT Support | Ground Ops supports Configuration Management by maintaining the infrastructure including servers, storage and network services | Management of Processes | Configuration Management | | | No Reuse | 2 |
| 8 | Space and Ground Network IT Support | Ground Ops supports Requirements Management by maintaining the infrastructure including servers, storage and network services | Management of Processes | Requirements Management | | | No Reuse | 2 |
| 9 | Space and Ground | Ground Ops supports Program / Project | Management of Processes | Program / Project | | | No Reuse | 2 |

| | | | | | | | Reuse | |
|---|---|---|---|---|---|---|---|---|
| | Ground Network IT Support | Program / Project Management by maintaining the infrastructure including servers, storage and network services | of Processes | Project Management | | | | |
| 10 | Space and Ground Network IT Support | Ground Ops supports Governance / Policy Management by maintaining the infrastructure including servers, storage and network services | Management of Processes | Governance / Policy Management | | | No Reuse | 0 |
| 11 | Space and Ground Network IT Support | Ground Ops supports Business Rule Management by maintaining the infrastructure including servers, storage and network services | Management of Processes | Business Rule Management | | | No Reuse | 2 |
| 12 | Space and Ground Network IT Support | Ground Ops supports Quality Management by maintaining the infrastructure including servers, storage and network services | Management of Processes | Quality Management | | | No Reuse | 2 |
| 13 | Space and Ground Network IT Support | Ground Ops supports Risk Management by maintaining the infrastructure including servers, storage and network services | Management of Processes | Risk Management | | | No Reuse | 2 |
| 14 | Space and Ground Network IT Support | Ground Ops supports Workgroup/Groupware by maintaining the infrastructure including servers, storage and network services | Organizational Management | Workgroup / Groupware | | | No Reuse | 3 |
| 15 | Space and Ground Network IT Support | Ground Ops supports Network Management by maintaining the infrastructure including servers, routers, switches and firewalls | Organizational Management | Network Management | | | No Reuse | 3 |
| 16 | Space and Ground Network IT Support | Ground Ops supports Strategic Planning and Mgmt by maintaining the infrastructure including servers, storage and network services | Investment Management | Strategic Planning and Mgmt | | | No Reuse | 2 |
| 17 | Space and Ground Network IT Support | Ground Ops supports Portfolio Management by maintaining the infrastructure including servers, storage and network services | Investment Management | Portfolio Management | | | No Reuse | 1 |
| 18 | Space and Ground Network IT Support | Ground Ops supports Performance Management by maintaining the infrastructure including | Investment Management | Performance Management | | | No Reuse | 2 |

| | | infrastructure including servers, storage and network services | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **19** | Space and Ground Network IT Support | Ground Ops supports Procurement by maintaining the infrastructure including servers, storage and network services | Supply Chain Management | Procurement | | | No Reuse | 2 |
| **20** | Space and Ground Network IT Support | Ground Ops supports Sourcing Management by maintaining the infrastructure including servers, storage and network services | Supply Chain Management | Sourcing Management | | | No Reuse | 0 |
| **21** | Space and Ground Network IT Support | Ground Ops supports Catalog Management by maintaining the infrastructure including servers, storage and network services | Supply Chain Management | Catalog Management | | | No Reuse | 1 |
| **22** | Space and Ground Network IT Support | Ground Ops supports Ordering / Purchasing by maintaining the infrastructure including servers, storage and network services | Supply Chain Management | Ordering / Purchasing | | | No Reuse | 1 |
| **23** | Space and Ground Network IT Support | Ground Ops supports Invoice / Requisition Tracking and Approval by maintaining the infrastructure including servers, storage and network services | Supply Chain Management | Invoice / Requisition Tracking and Approval | | | No Reuse | 2 |
| **24** | Space and Ground Network IT Support | Ground Ops supports Content Authoring by maintaining the infrastructure including servers, storage and network services | Content Management | Content Authoring | | | No Reuse | 2 |
| **25** | Space and Ground Network IT Support | Ground Ops supports Content Review and Approval by maintaining the infrastructure including servers, storage and network services | Content Management | Content Review and Approval | | | No Reuse | 2 |
| **26** | Space and Ground Network IT Support | Ground Ops supports Tagging and Aggregation by maintaining the infrastructure including servers, storage and network services | Content Management | Tagging and Aggregation | | | No Reuse | 1 |
| **27** | Space and Ground Network IT Support | Ground Ops supports Content Publishing and Delivery by maintaining the infrastructure including servers, storage and network services | Content Management | Content Publishing and Delivery | | | No Reuse | 2 |

| 28 | Space and Ground Network IT Support | Ground Ops supports Syndication Management by maintaining the infrastructure including servers, storage and network services | Content Management | Syndication Management | | | No Reuse | 0 |
|----|----|----|----|----|----|----|----|----|
| 29 | Space and Ground Network IT Support | Ground Ops supports Document Imaging and OCR by maintaining the infrastructure including servers, scanners, document management software, storage and network services | Document Management | Document Imaging and OCR | | | No Reuse | 2 |
| 30 | Space and Ground Network IT Support | Ground Ops supports Document Referencing by maintaining the infrastructure including servers, document management software, storage and network services | Document Management | Document Referencing | | | No Reuse | 1 |
| 31 | Space and Ground Network IT Support | Ground Ops supports Document Revisions by maintaining the infrastructure including servers, document management software, storage and network services | Document Management | Document Revisions | | | No Reuse | 2 |
| 32 | Space and Ground Network IT Support | Ground Ops stores, manages & backups 20 TBs of Ground Support data | Document Management | Library / Storage | | | No Reuse | 3 |
| 33 | Space and Ground Network IT Support | Ground Ops supports Document Review and Approal by maintaining the infrastructure including servers, document management software, storage and network services | Document Management | Document Review and Approval | | | No Reuse | 2 |
| 34 | Space and Ground Network IT Support | Ground Ops supports Document Conversion by maintaining the infrastructure including servers, document management software, storage and network services | Document Management | Document Conversion | | | No Reuse | 2 |
| 35 | Space and Ground Network IT Support | Ground Ops supports Indexing by maintaining the infrastructure including servers, document management software, storage and network services | Document Management | Indexing | | | No Reuse | 2 |
| 36 | Space and Ground Network IT Support | Ground Ops supports Classification by maintaining the infrastructure including | Document Management | Indexing | | | No Reuse | 2 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Support | infrastructure including servers, document management software, storage and network services | | | | | |
| 37 | Space and Ground Network IT Support | Ground Ops supports Knowledge Capture by maintaining the infrastructure including servers, databases, storage and network services | Knowledge Management | Knowledge Capture | | | No Reuse | 2 |
| 38 | Space and Ground Network IT Support | Ground Ops supports Knowledge Engineering by maintaining the infrastructure including servers, databases, storage and network services | Knowledge Management | Knowledge Engineering | | | No Reuse | 2 |
| 39 | Space and Ground Network IT Support | Ground Ops supports Information Retrieval by maintaining the infrastructure including servers, databases, storage and network services | Knowledge Management | Information Retrieval | | | No Reuse | 2 |
| 40 | Space and Ground Network IT Support | Ground Ops supports Information Mapping / Taxonomy by maintaining the infrastructure including servers, databases, storage and network services | Knowledge Management | Information Mapping / Taxonomy | | | No Reuse | 2 |
| 41 | Space and Ground Network IT Support | Ground Ops supports Information Sharing by maintaining the infrastructure including servers, databases, storage and network services | Knowledge Management | Information Sharing | | | No Reuse | 2 |
| 42 | Space and Ground Network IT Support | Ground Ops supports Categorization by maintaining the infrastructure including servers, databases, storage and network services | Knowledge Management | Categorization | | | No Reuse | 2 |
| 43 | Space and Ground Network IT Support | Ground Ops supports Record Linking / Association by maintaining the infrastructure including servers, document management software, storage and network services | Records Management | Record Linking / Association | | | No Reuse | 1 |
| 44 | Space and Ground Network IT Support | Ground Ops supports Document Classification by maintaining the infrastructure including servers, document | Records Management | Document Classification | | | No Reuse | 1 |

| | | management software, storage and network services | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 45 | Space and Ground Network IT Support | Ground Ops supports Document Retirement by maintaining the infrastructure including servers, document management software, storage and network services | Records Management | Document Retirement | | | No Reuse | 1 |
| 46 | Space and Ground Network IT Support | Ground Ops supports Digital Rights Management by maintaining the infrastructure including servers, document management software, storage and network services | Records Management | Digital Rights Management | | | No Reuse | 1 |
| 47 | Space and Ground Network IT Support | Ground Ops supports Modeling by maintaining the infrastructure including servers, storage and network services | Knowledge Discovery | Modeling | | | No Reuse | 3 |
| 48 | Space and Ground Network IT Support | Ground Ops supports Predictive Analysis by maintaining the infrastructure including servers, storage and network services | Analysis and Statistics | Mathematical | | | No Reuse | 2 |
| 49 | Space and Ground Network IT Support | Ground Ops supports Simulation by maintaining the infrastructure including servers, storage and network services | Knowledge Discovery | Simulation | | | No Reuse | 2 |
| 50 | Space and Ground Network IT Support | Ground Ops supports Structural / Thermal by maintaining the infrastructure including servers, storage and network services | Analysis and Statistics | Structural / Thermal | | | No Reuse | 1 |
| 51 | Space and Ground Network IT Support | Ground Ops supports Graphing / Charting by maintaining the infrastructure including servers, storage and network services | Visualization | Graphing / Charting | | | No Reuse | 3 |
| 52 | Space and Ground Network IT Support | Ground Ops supports Imagery by maintaining the infrastructure including servers, storage and network services | Visualization | Imagery | | | No Reuse | 4 |
| 53 | Space and Ground Network IT Support | Ground Ops supports Multimedia by maintaining the infrastructure including servers, storage and network services | Visualization | Multimedia | | | No Reuse | 2 |
| 54 | Space and Ground Network IT | Ground Ops supports CAD by maintaining the infrastructure including | Visualization | CAD | | | No Reuse | 2 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Network IT Support | infrastructure including servers, storage and network services | | | | | |
| 55 | Space and Ground Network IT Support | Ground Ops supports Demand Forecasting / Mgmt by maintaining the infrastructure including servers, storage and network services | Business Intelligence | Demand Forecasting / Mgmt | | No Reuse | 1 |
| 56 | Space and Ground Network IT Support | Ground Ops supports Balanced Scorecard by maintaining the infrastructure including servers, storage and network services | Business Intelligence | Balanced Scorecard | | No Reuse | 1 |
| 57 | Space and Ground Network IT Support | Ground Ops supports Decision Support and Planning by maintaining the infrastructure including servers, storage and network services | Business Intelligence | Decision Support and Planning | | No Reuse | 1 |

*5. To demonstrate how this major IT investment aligns with the FEA Technical Reference Model (TRM), please list the Service Areas, Categories, Standards, and Service Specifications supporting this IT investment.*

*FEA SRM Component: Service Components identified in the previous question should be entered in this column. Please enter multiple rows for FEA SRM Components supported by multiple TRM Service Specifications.*

*Service Specification: In the Service Specification field, Agencies should provide information on the specified technical standard or vendor product mapped to the FEA TRM Service Standard, including model or version numbers, as appropriate.*

| | SRM Component | Service Area | Service Category | Service Standard | Service Specification (i.e., vendor and product name) |
|---|---|---|---|---|---|
| 1 | Inbound Correspondence Management | Service Access and Delivery | Access Channels | Web Browser | Microsoft Internet Explorer |
| 2 | Inbound Correspondence Management | Service Access and Delivery | Access Channels | Wireless / PDA | Palm OS |
| 3 | Inbound Correspondence Management | Service Access and Delivery | Access Channels | Collaboration / Communications | N/A |
| 4 | Inbound Correspondence Management | Service Access and Delivery | Access Channels | Other Electronic Channels | N/A |
| 5 | Outbound Correspondence Management | Service Access and Delivery | Delivery Channels | Internet | NISN |
| 6 | Outbound Correspondence Management | Service Access and Delivery | Delivery Channels | Internet | NISN, KICS |
| 7 | Outbound Correspondence Management | Service Access and Delivery | Delivery Channels | Extranet | NISN |
| 8 | Outbound Correspondence Management | Service Access and Delivery | Delivery Channels | Peer to Peer (P2P) | KICS, NISN |

| | | | | |
|---|---|---|---|---|
| | Management | | | | |
| 9 | Outbound Correspondence Management | Service Access and Delivery | Delivery Channels | Virtual Private Network (VPN) | Cisco Systems |
| 10 | Configuration Management | Service Access and Delivery | Service Requirements | Legislative / Compliance | NASA Headquarters |
| 11 | Configuration Management | Service Access and Delivery | Service Requirements | Authentication / Single Sign-on | RSA Keon |
| 12 | Configuration Management | Service Access and Delivery | Service Requirements | Hosting | HP ProLiant, Dell; Linux, Redhat; HP U/X |
| 13 | Configuration Management | Service Access and Delivery | Service Transport | Supporting Network Services | Cisco Systems |
| 14 | Software Development | Service Platform and Infrastructure | Software Engineering | Test Management | N/A |
| 15 | Software Development | Service Platform and Infrastructure | Software Engineering | Modeling | Arena |
| 16 | Library / Storage | Service Platform and Infrastructure | Database / Storage | Database | Oracle |
| 17 | Library / Storage | Service Platform and Infrastructure | Database / Storage | Storage | Storage Tech, EMC |
| 18 | Software Development | Service Platform and Infrastructure | Hardware / Infrastructure | Servers / Computers | HP ProLiant, Dell; Linux, Redhat; HP U/X |
| 19 | Software Development | Service Platform and Infrastructure | Hardware / Infrastructure | Embedded Technology Devices | N/A |
| 20 | Software Development | Service Platform and Infrastructure | Hardware / Infrastructure | Peripherals | HP Printers, Lanier Printers |
| 21 | Software Development | Service Platform and Infrastructure | Hardware / Infrastructure | Wide Area Network (WAN) | NISN |
| 22 | Software Development | Service Platform and Infrastructure | Hardware / Infrastructure | Local Area Network (LAN) | KICS, USA |
| 23 | Software Development | Service Platform and Infrastructure | Hardware / Infrastructure | Network Devices / Standards | Cisco Systems |
| 24 | Software Development | Service Platform and Infrastructure | Hardware / Infrastructure | Video Conferencing | Microsoft Netmeeting |
| 25 | Risk Management | Component Framework | Security | Certificates / Digital Signatures | RSA KEON |
| 26 | Risk Management | Component Framework | Security | Supporting Security Services | ISS |
| 27 | Graphing / Charting | Component Framework | User Presentation / Interface | Static Display | Microsoft Visio, Powerpoint |
| 28 | Graphing / Charting | Component Framework | User Presentation / Interface | Dynamic Server-Side Display | Microsoft IIS Active Server Pages, Adobe Coldfusion |
| 29 | Graphing / Charting | Component Framework | User Presentation / Interface | Content Rendering | Autorender Pro |
| 30 | Graphing / Charting | Component Framework | User Presentation / Interface | Wireless / Mobile / Voice | AT&T, Sprint Nextel/Nokia, Samsung, Research in Motion |
| 31 | Configuration Management | Service Interface and Integration | Interoperability | Data Format / Classification | Track Studio |
| 32 | Configuration Management | Service Interface and Integration | Integration | Middleware | Oracle |

| | Management | and Integration | | | |
|---|---|---|---|---|---|
| 33 | Configuration Management | Service Interface and Integration | Integration | Enterprise Application Integration | Documentum |
| 34 | Record Linking / Association | Service Interface and Integration | Interoperability | Data Format / Classification | N/A |
| 35 | Record Linking / Association | Service Interface and Integration | Interoperability | Data Types / Validation | N/A |
| 36 | Record Linking / Association | Service Interface and Integration | Interoperability | Data Transformation | N/A |
| 37 | Configuration Management | Service Interface and Integration | Interface | Service Discovery | N/A |
| 38 | Configuration Management | Service Interface and Integration | Interface | Service Description / Interface | N/A |

| |
|---|
| *6. Will the application leverage existing components and/or applications across the Government (i.e., FirstGov, Pay.Gov, etc)?* |
| no |

## PART THREE

## RISK

*You should perform a risk assessment during the early planning and initial concept phase of the investment's life-cycle, develop a risk-adjusted life-cycle cost estimate and a plan to eliminate, mitigate or manage risk, and be actively managing risk throughout the investment's life-cycle.*

*Answer the following questions to describe how you are managing investment risks.*

*1. Does the investment have a Risk Management Plan?*

yes

*1.a. If yes, what is the date of the plan?*

2007-02-19

*1.b. Has the Risk Management Plan been significantly changed since last year's submission to OMB?*

no

## COST & SCHEDULE

*1. Was operational analysis conducted?*

yes

*1.a. If yes, provide the date the analysis was completed.*

2008-05-09

*What were the results of your operational analysis?*

Launch and Landing tracks performance at a level higher than IT specific investments, which are imbedded in the various budget elements. Updates and changes to the Ground Operations Processing Systems follow well-documented and established processes to ensure operability and safety to flight. From requirements generation through acceptance testing and approval of the new ground systems including software and/or hardware, focus is on demonstrating desired performance while increasing reliability, usability, and maintainability. Rigid internal checks including concept, preliminary and critical design reviews are performed throughout the development process. Development is controlled by NSTS 07700 requirements. Products developed in-house are analyzed for failure modes and effects and are tested and verified to work as designed. Hardware changes require a Certification Requirements plan describing the NSTS requirement paragraphs which may be affected, and a Certification Approval Request plan demonstrating compliance with all associated requirements. Prior to funding, all changes to the Ground Operations Processing Systems must be reviewed and approved by a Configuration Control Board and a Level III/IV Board. Large scale changes which have the potential to impact multiple systems are reviewed on a case by case basis by an Engineering Review Board, a Risk Review Board and may require a formal Design Certification Review prior to implementation. The systems of Ground Operations also participate in the annual Planning, Programming, Budgeting, and Execution (PPBE) process to determine which assets require investment to bring their performance, or sustain their performance, within expected and acceptable operating parameters. This survey of the engineering and operations community seeks technical data on system performance and cost, including cost payback based on investment versus sustained operations and maintenance cost, as well as a system risk assessment that characterizes system risk

should the investment not be made versus system risk post investment. Cost, schedule, and risk are used to characterize and prioritize investment candidates during the PPBE process. Considerable weight is given to investments that mitigate significant safety risks. Cost-payback analysis is also considered a significant factor in analyzing which investments the Shuttle Program will make.